

Having thus defined the invention, the following is claimed:

1. A weld wire for storage on a spool of weld wire, said wire having a substantially linear cast in the form of an undulating curve generally in a single plane, said linear cast formed on said weld wire prior to said weld wire being wound on said spool and at least partially retained on said weld wire after said weld wire is unwound from said spool.
2. The weld wire as defined in claim 1, wherein said undulating curve is a succession of generally semicircular sections.
3. The weld wire as defined in claim 1, wherein said cast has a generally fixed radius of curvature.
4. The weld wire as defined in claim 2, wherein said cast has a generally fixed radius of curvature.
5. The weld wire as defined in claim 3, wherein said radius of curvature is in the range of 15-40 inches.
6. The weld wire as defined in claim 4, wherein said radius of curvature is in the range of 15-40 inches.
7. A weld wire having a desired imparted shape memory for storage on a spool of weld wire, said weld wire having said shape memory imparted on said weld wire at least partially prior to said weld wire being wound on said spool.
8. The weld wire as defined in claim 7, wherein said shape memory substantially lies in a single plane.
9. The weld wire as defined in claim 7, wherein said shape memory is a waveform.

10. The weld wire as defined in claim 8, wherein said waveform has substantially the same maximum amplitude for each half cycle of a full waveform.

11. The weld wire as defined in claim 8, wherein each half cycle of said waveform is substantially semi-circular.

12. A method of forming a weld wire for storage on a spool, said method comprising:

- (a) extruding said weld wire;
- (b) substantially removing memory from said weld wire; and,
- (c) forming a cast in said weld wire, said cast in the form of an undulating curve

5 generally in a single plane.

13. The method as defined in claim 12, wherein said undulating curve has a generally fixed radius of curvature.

14. The method as defined in claim 12, wherein said undulating curve is a succession of generally semi-circular sections.

15. The weld wire as defined in claim 13, wherein said radius of curvature is in the range of 15-40 inches.

16. A method of forming a weld wire for storage on a spool, said method comprising:

- (a) forming said weld wire; and,
- (b) imparting a desired shape memory on said weld wire.

17. The method as defined in claim 16, wherein said weld wire is at least partially formed by an extrusion process.

18. The method as defined in claim 16, wherein said desired shape memory is at least partially imparted on said weld wire prior to winding said weld wire on said spool, and said desired shape memory is at least partially retained on said weld wire after said weld wire is unwound from said spool.

19. The method as defined in claim 16, wherein said desired shape memory is at least partially imparted on said weld wire by a casting process.

20. The method as defined in claim 16, including the step of at least partially removing the shape memory on said weld wire resulting from said forming of said weld wire prior to imparting said desired shape memory on said weld wire.

21. The method as defined in claim 16, wherein said shape memory substantially lies in a single plane.

22. The method as defined in claim 16, wherein said desired shape memory is a waveform.

23. The method as defined in claim 22, wherein said waveform has substantially the same maximum amplitude for each half cycle of a full waveform.

24. The method as defined in claim 22, wherein each half cycle of said waveform is substantially semi-circular.

25. The method as defined in claim 16, wherein said desired shape memory is at least partially retained on said weld wire as said weld wire passes through a welding tip of a welding machine.